

Economics and Sociology  
Occasional Paper No. 2569

ASIAN EFFORTS TO DEVELOP RURAL FINANCIAL MARKETS:  
SOME INSIGHTS FOR BRAZIL

by

Richard L. Meyer

Paper Presented at the  
Seminario de Microfinancas

BNDES, Rio de Janeiro

May 2-3, 2000

Rural Finance Program  
Department of Agricultural, Environmental, and  
Development Economics  
The Ohio State University  
2120 Fyffe Road  
Columbus, Ohio 43210-1099

E-mail: [meyer.19@osu.edu](mailto:meyer.19@osu.edu)

**Abstract:**

Many Latin American countries, including Brazil, pursued an aggressive supply-leading approach to agricultural credit policy beginning in the mid 1960s. Many Asian countries did the same. The results have been largely negative. However, three relatively successful “flagship” institutions have emerged in Asia with strong outreach and sustainability. This paper highlights these three institutions and analyzes their success using a three-pronged analytical framework of policy environment, financial infrastructure and institutional development.

## **Asian Efforts to Develop Rural Financial Markets: Some Insights for Brazil**

### **I. Introduction**

Beginning in the 1960s, many Latin American countries, including Brazil, pursued an aggressive supply-leading approach to agricultural credit policy (Araujo, Shiota, and Meyer, 1990). Massive amounts of subsidized funds were supplied to agriculture. Lending quotas were imposed on commercial banks. Specialized agricultural development banks and cooperatives were created in some countries to serve targeted clients. The results have been largely negative. Subsidies are often concentrated in a few borrowers. Many financial institutions have failed, many have had to be recapitalized, and many weak institutions have struggled with large nonperforming portfolios. Few countries have developed strong institutions capable of serving large numbers of rural farm and nonfarm clients. Large segments of the financial system are characterized by limited outreach and poor sustainability. The poor tend to have the least access to formal financial services.

Our recent analysis of Asia's rural financial markets revealed similar problems in many countries (Meyer and Nagarajan, 2000).<sup>1</sup> Policymakers have actively intervened in financial markets in attempting to meet economic and social objectives, first to support the Green Revolution and, more recently, to reduce poverty. A positive feature in some countries, however, is a large amount of experimentation, especially by nongovernmental organizations (NGOs), to break the access barriers faced by the poor. Recent innovations appear to be more promising than the earlier attempts to induce lenders to serve small farmers, but some disturbing problems have also begun to appear in some programs. In spite of this generally negative situation, three

---

<sup>1</sup> This paper draws on research conducted for the Asian Development Bank. The results were presented in a longer version of this paper at the APO Symposium on Agricultural Credit held in Tokyo September 8-14, 1999. The support provided by the ADB and the APO and the assistance of many people who helped with the study are gratefully acknowledged. The views expressed here are personal and may not be shared by the ADB, the APO, or any of the persons who assisted in the study. Unless specifically noted, the references and sources of data used in this paper are reported in the ADB study.

relatively successful “flagship” institutions have emerged in Asia with strong outreach and sustainability features. Understanding their success provides insights into methods for improving the performance of rural financial markets that may have applicability in Brazil. This paper highlights these institutions and factors that contributed to their success.

## **II. The Asian Approach to Developing Rural Financial Markets**

The aggressive directed credit approach to agricultural lending pursued by many Asian policymakers can be summarized by the following nine general characteristics:

1. Interest rates for loans are subsidized and rates for small farmers are especially low.
2. Governments and donors are major sources of funds and local savings mobilization is largely ignored.
3. The policy objective is to increase the supply of loans made to farmers and microentrepreneurs with little attention paid to institutional sustainability.
4. Production packages are created with credit treated as an input like seeds and fertilizer.
5. Credit is targeted for “productive purposes.” Loans for consumption and rural nonfarm enterprises are ignored and, in some cases, prohibited.
6. Many credit programs target small farmers and employ supervised credit through cooperatives as a means to ensure it is used properly.
7. Cooperatives are often the primary credit channels, while commercial banks and agricultural development banks are more important in some countries.
8. Transaction costs for lenders and borrowers are largely ignored.
9. Some recent programs have broadened their target from small farmers to the rural poor.

Our case studies and other Asian literature revealed that a surprisingly large number of countries have made relatively little progress in the past two decades. Subsidizing borrowers continues to be the primary objective and sustainability of financial institutions is secondary. Yet there is little conclusive evidence that subsidies reach the intended persons, or that subsidized

loans make a significant impact on technological change and agricultural output. There are important exceptions but the problems today are similar to those reported in ADB studies in the 1970s:

1. Interest rates are often too low to cover the costs and risks of lending. Some microfinance organizations (MFOs) set rates high enough to cover most costs, but regulations and political pressures keep many agricultural lenders from raising rates to adequate levels.
2. Many countries resist adopting a market-oriented approach to rural finance. Targeted programs, subsidized refinance funds, and restrictions on clientele that can be served still exist even though some repressive features of directed credit have been eliminated.
3. Nonperforming loans are a serious problem. Many rural financial institutions, especially several agricultural development banks, are weak and depend on subsidies.
4. Savings mobilization is still relatively neglected in spite of the early successes observed by rural cooperatives in Japan, Republic of Korea and Taiwan.
5. Policymakers emphasize the problems of agriculture and overlook the broader demand for financial services by the rural nonfarm economy.
6. Most rural financial institutions are unprepared to make long-term loans and to utilize the explosion in new information and communication technologies for modernizing banking

### **III. The Positive Example of Three Flagship Institutions**

Fortunately, the entire Asian rural finance experience is not as bleak as described above. Three institutions have performed far better than most rural financial institutions in the developing world. These flagship institutions are the Bank for Agriculture and Agricultural Cooperatives (BAAC) in Thailand, the BRI unit desa system of Bank Rakyat in Indonesia (BRI-UD), and the Grameen Bank (GB) in Bangladesh. Recent comparative information about them is presented in Table I with emphasis on the two criteria increasingly accepted as the appropriate

framework for analysis: outreach and self-sustainability (Christen, et al., 1995; Yaron, Benjamin and Piprek, 1997). *Outreach* refers to the degree of market coverage for low-income groups previously without access to formal financial services. It includes both the horizontal dimension (breadth of outreach or number of clients served) and the vertical dimension (depth or level of poverty of clients). In addition, the types and variety of financial services offered are also considered.

*Sustainability* refers to the ability of a financial institution to supply financial services on a continuous cost-covering basis without external subsidies. The Subsidy Dependence Index (SDI) has been widely adopted to evaluate subsidization (Yaron, 1992). Sustainability is desirable for at least two reasons: first, temporary access to loans produces some benefits, but creating a long-term sustainable financial relationship is more valuable because it provides opportunities for future benefits. A sustainable institution will benefit more clients than one that begins with a flourish but later collapses. Second, a sustainable institution is free from budgetary dependency on government and donors so borrowers can expect long-term access to loans if they repay promptly. This helps the institutions grow and protects them from political intrusions.

Some analysts fear a potential trade-off between outreach and sustainability (e.g. Hulme and Mosley, 1996). Institutions striving for self-sustainability may opt to reduce costs through making larger sized repeat loans to existing clients rather than serving more new poor clients with small loans. Realizing economies of scale through wider outreach may contribute to sustainability since per unit lending costs decline as loan volume rises, while reaching greater depth of outreach may detract from sustainability if the costs and risks of lending are not covered by interest income. These three achieve both dimensions of outreach, but sustainability needs to be improved in two.

The three institutions have slightly different objectives. BAAC was created in 1966 specifically to serve agriculture. BRI-UD was reorganized in 1983/84, following the collapse of

the subsidized BIMAS program, to serve rural low- and middle- income households and its portfolio has been dominated by loans for trading and other nonfarm activities. GB started as an NGO in 1976 to serve the poor and became a specialized bank for the poor in 1983. Almost 90 percent of its current clients are women, and many borrow for farm-related and nonfarm activities.

All three institutions lend to millions of clients, but BAAC is relatively more successful as it reaches over 80 percent of the country's farm families. It has a larger loan portfolio and a larger average loan size. BAAC also performs well in reaching the poor as seen by the comparison of average loan size with the country's GDP per capita. GB largely makes group loans, BRI-UD makes only individual loans, and BAAC uses both types of technology.

Performance in savings mobilization sharply differentiates the three. The total savings for BAAC and BRI-UD are roughly equal, but the number of savers is much larger in BRI-UD. The total savings in BRI-UD far exceed its loan balances, while BAAC and GB rely on other sources of funds for a significant share of their total lending. GB does not actively promote voluntary savings. Sustainability is the second major difference among the three. BAAC employs a low interest rate policy so its interest rate spread is the smallest and, although highly efficient (3.5 percent operating costs), its profits and return on assets are low. It has some loan arrears, especially for loans made to cooperatives and farmer associations. It would need to raise the average yield on loans from 11 to almost 15 percent to become free of subsidies. The GB has an even more serious problem because it would have to raise its nominal interest rate on general loans from 20 to 33 percent to be subsidy free. BRI-UD charges the highest interest rates and earns the highest rate spread so it can easily cover its higher operating costs. It was so profitable in 1995 that it could have reduced its yield on loan portfolio from 31.6 to 16.3 percent and remained free of subsidy. Other things being equal, BAAC would need to charge roughly 15

percent on loans, BRI-UD almost 16 percent, and GB about 33 percent.<sup>2</sup> Considering differences in loan sizes, it should be expected that BAAC would reach self-sufficiency with lower interest rates, while the GB would need to charge the highest rates.

#### **IV. Factors that Contribute to the Success of these Financial Institutions**

Why have these flagship institutions succeeded relatively well when so many Asian institutions perform poorly? Each case is unique but several systematic factors contribute to their success. They are summarized here under a three-pronged analytical framework of policy environment, financial infrastructure, and institutional development.

##### **A. Policy Environment**

Although the past urban bias of economic policies in some Asian countries has been reduced, many policy issues influence the prospects for developing sound rural financial markets.

1. **Interest Rates.** The first problem is that interest rates for farm and microenterprise loans are controlled in some countries, and financial institutions resist raising rates in countries where they are deregulated. Rates must be high enough so interest spreads cover operating costs and losses. Savings rates must be positive in real terms to stimulate savers to deposit funds for lending, and owners must earn enough profits for a reasonable return on capital, for reserves and for reinvestment for future growth. Therefore, institutions must be free to price their loans and other services to cover costs and risks. The low interest-rate policies of BAAC and GB are intended to assist borrowers, but they force the institutions to rely on governments and donors for continuous subsidies, which introduce uncertainties and the possibility of political intervention. BRI-UD determines its rate structure so it avoids some of these problems.

---

<sup>2</sup> These values vary from year to year depending on the amount of subsidies received. It would be necessary to evaluate carefully loan loss provisions, profits needed for future investment and growth, and several other factors before determining optimum interest rates.



The second problem is that unsubsidized institutions must compete with subsidized ones. This is a serious problem in Indonesia because the government, the World Bank, and the UNDP have pumped subsidized credit into village projects to alleviate the effects of the financial crisis. BRI-UD may not be greatly affected but other rural financial institutions are hurt by this competition. The soft conditions and weak enforcement procedures associated with these special projects may undermine the repayment culture as loans are treated as grants. Emergency assistance must be channeled through networks other than financial institutions.

2. Client Selection. Freedom to set interest rates is often linked to freedom to select clients. Subsidized credit projects usually carry restrictions about the target group. The more narrowly specified the target group (e.g. small rice farmers), the greater the risk that lenders will be induced into risky, undiversified portfolios. Moreover, large subsidies often encourage greater political intrusion in credit allocation. These three institutions generally select their own clients, but BAAC administers some special government projects and has been restricted in serving nonfarm enterprises. Financial institutions need the flexibility to design and market financial services that match the demands of potential clients. They must avoid targeted programs that constrain them to serve only a specific group or type of client because this will limit their ability to diversify their portfolios as a protection against systemic risks. Clients should self-select themselves to use products offered by specific institutions rather than being targeted by programs. Freedom of choice by clients and institutions permits the development of healthy banking relationships. Institutions may choose to market specific products to specific clients. For example, GB shifted its emphasis towards women who are better suited than men for group lending and weekly meetings. Some MFOs reduce risks by lending only to those micro clients who have successfully operated their businesses for several months before seeking a loan.

## **B. Financial Infrastructure**

Perhaps one of the most overlooked aspects of Asian rural financial market performance is the financial infrastructure needed for efficient financial intermediation. Infrastructure is important because it affects the operational costs of all financial institutions.

1. Legal and Regulatory Framework. The flagship institutions have advantages compared to nonregulated competitors because they operate under charters that permit them to legally mobilize deposits. The protection of savings mobilized by MFOs is an important regulatory issue. The regulatory capacity in the three countries has been questioned but institutional safety and soundness have thus far been assured. However, the Asian financial crisis in 1997/98 revealed the need for stronger regulatory capacities in the region (Kochkar, Loungani, and Stone, 1998).

An important lesson in Bangladesh is that MFOs can temporarily avoid some problems affecting the commercial banking system, such as expensive legal procedures to collect loans. When clients are motivated to repay because of peer pressure and their demand for new loans, the legal conditions for contract enforcement may not be so important. However, problems may develop when larger loans are made requiring more traditional forms of contract enforcement. The more MFOs act like traditional banks, the more they can expect to face banking problems.

2. Information Systems. No systematic analysis has been made of information systems in these three countries. GB has a centralized accounting system that protected it when last year's flood damaged the records of other MFOs. Land titling projects in Thailand reduce the transaction costs for lenders by making it easier and cheaper to access information about the legal status of land offered as collateral. Efficient systems to supply information about borrower indebtedness and repayment history are required as financial markets become more sophisticated. Lenders need ready access to accurate information about the debts of loan applicants. Regulated institutions provide names of delinquent borrowers so one institution knows a borrower's status with another institution, but this information is usually not available from nonregulated

institutions. Countries without national identity cards, such as India, have special problems in verifying client identity.

### **C. Institutional Development**

The three flagship institutions have undergone a long process of institutional development involving complex interactions between institutional design, management and governance, incentive systems, human capital development, and a variety of other factors (Chaves and Gonzalez-Vega, 1996; Yaron, et al., 1997).

1. The Design of Products and Services. Financial institutions must design their products and services considering two objectives. The first is expected demand from perspective clients and the second is the ability to cover costs and generate profits, either as single transactions or over the expected life of a relationship with a client. For example, financial institutions may not be able to competitively offer very small, emergency loans supplied by the informal sector; however, BAAC and GB have successfully designed products and technologies for short-term working capital loans without formal collateral normally required by banks. These three institutions use market research, test marketing, and pilot projects to test and adapt their products to meet client demands. BRI-UD and BAAC developed attractive savings products that contributed to their growth in savings. Moreover, unlike most targeted credit projects, these institutions lend for a variety of purposes recognizing that clients are usually the best judges of how to use loans. However, they are strict in expecting repayment regardless of how borrowers use the loan proceeds.

2. Loan Recovery. The difference between the success and failure of financial institutions is often determined by loan recovery. These three institutions report arrears rates of less than ten percent and their actual loss rate is much lower. Repayment rates are determined by several factors. First, successful institutions design products that improve the borrowers' ability to repay, for example, by making small loans and setting repayment schedules consistent with

borrower cash flow. The weekly repayment schedules used by the GB results in small sized payments and frequent contact with clients. The loss of customers may be a sign that products and technologies need to be changed. For example, the GB and some MFOs in Bangladesh have recently experienced high drop-out rates. This is a sign that loan products, repayment schedules, and savings requirements may be excessively rigid (Wright, 1999).

Second, institutions increase borrower willingness to repay in two ways. Peer pressure among group members may encourage repayment for lenders making joint-liability loans. An even more important factor is the positive image of institutions seeking long-term relationships with clients, so the expectation of future loans with superior terms and conditions induces good repayment. In addition, BRI-UD uses the positive incentive of interest relates as a stimulus for on-time payments, while BAAC imposes late payment penalties.

Timely information about clients is a third factor affecting repayment. These three institutions have good internal information systems so loan officers know immediately when loans become overdue, and can follow up with clients and arrange for repayment. The open weekly GB meetings where loan payments and savings deposits are made provide transparency so clients immediately know who is not paying and this places social pressure on delinquent borrowers.

3. Management and Governance. Managing large institutions with thousands of staff and hundreds of outlets is a huge task in countries with poor communication infrastructure. These three institutions have the reputation of being professionally managed and have considerable autonomy in day-to-day operations. The founders of BRI-UD and GB are well known for their vision and commitment, and they have instilled these traits in their subordinates. The Thai government has consistently chosen high quality managers for BAAC because good management and efficiency rather than political expediency were demanded by the governance system. At times, foreign advisors may have protected BRI-UD from political pressures and poor decisions.

4. **Staff Incentive Systems.** Employees desire to retain their employment in these institutions because base salaries are higher than some equivalent jobs in the public or private sector. The BRI-UD system was designed as profit and loss centers, which provides a framework for performance-based remuneration. Both BRI-UD and BAAC use bonus payments to stimulate staff efficiency. Bonuses are paid either on overall institutional performance or on individual employee efficiency. Incentives encourage loan officers to manage many clients and a large portfolio. GB operates under difficult constraints because of the personnel policies of the bureaucratic state-owned banks, so group spirit and social commitment are used to enhance staff performance. In the recent flood, GB first aided its employees so they could later effectively service their clients, and special compensation and vacation time were granted to employees working under difficult circumstances.

5. **Human Capital Development.** The three institutions use recruitment and hiring policies to obtain high quality employees. BAAC and GB have higher educational requirements for potential loan officers, while BRI-UD hires staff with lower education levels but who know the local environment in which they are assigned. All three use intensive training programs to teach specific skills and instill the institutional mission. BAAC has an ADB technical assistance project to upgrade its operations and train staff who need more expertise to exploit its recent authorization to expand lending to nonfarm enterprises and to increase loan sizes for existing farm clients. New staff hired by BRI-UD and BAAC are assigned as trainees or apprentices for evaluation before being hired as regular staff. Loan officers in BRI-UD earn higher levels of loan approval authority as they gain experience, and the decentralization of decisionmaking is possible because of investments in human capital development.

## **VI. Conclusions and Implications**

Most Asian rural financial markets are poorly prepared for the 21<sup>st</sup> century. Many institutions are weak and survive because of government and donor funding. They lack technical

competence to evaluate credit risks, the financial infrastructure is inadequate, and governmental policies are often more destructive than supportive. Financial dualism is increasing, first, in the gap in access to financial services between rural and urban firms and households. Second, there is increased financial dualism in the “digital divide” that separates those using modern computers and communication technologies from those that do not. Fortunately, the new financial markets paradigm (Adams, 1998) is taking root in Asia and a market-oriented approach is emerging in some countries. Where financial markets have been allowed to operate more freely, performance has been much better. The relative success of many MFOs can be attributed to their adoption of elements of the new paradigm.

The three-pronged analytical framework of policy environment, financial infrastructure, and institutional development suggests areas where most Asian countries need to make improvements. Fortunately, Asia has three flagship financial institutions that can serve as models for other institutions. Experience has shown that the appropriate role of governments is not to engage in an aggressive supply-leading approach to financial market development but to concentrate their resources in creating a favorable environment, investing in supportive infrastructure, and building institutions.

Admittedly, Asia faces serious challenges in serving rural areas with large numbers of poor people, poor resources, and subject to periodic conflicts and natural disasters. Serving agriculture involves more risks and costs than serving microentrepreneurs, so expanding the formal financial frontier (Von Pischke, 1991) is not simply a matter of mimicking the successes of microfinance. Fortunately, the successes of the flagship institutions demonstrate the potential for strong outreach and sustainability when appropriate policies, financial infrastructure and institutional designs are employed. This lesson should give encouragement to Brazilians working to expand sustainable finance to more rural and microfinance clients.

**Table.1: Selected Characteristics and Performance Measures of BAAC, BRI-UD, and the Grameen Bank**

Item	BAAC	BRI-UD	GB
Year established/reorganized	1966	1983/84	1983
Clientele	Farmers, cooperatives, farmers' associations	Rural low-and middle-income households	Rural poor
Financial services	Loans and savings deposits	Loans and savings deposits	Loans and compulsory savings
Lending technology	Group and individual	Individual	Group
Approximate number of loans outstanding	3.1 million	2.3 million	2.1 million
Volume of loans outstanding	\$3.8 billion (non-cooperative loans) <sup>a</sup>	\$1.2 billion	\$289 million
Average outstanding loan	\$1,285	\$567	\$142
Average outstanding loan as percentage of GDP per capita	42 <sup>b</sup>	54	64
Average annual volume of savings	\$2.8 billion	\$2.6 billion	\$133 million
Average annual savings as a percent of average annual outstanding loans	66.5	199.0	45.6
Number of savers	4.4 million <sup>c</sup>	14.5 million	2.1 million
Approximate nominal effective annual interest rate	8.3 to 15.5	32.7	20
Interest rate spread	1995: 4.1	1994: 21.7	1995: 8.0
Total operating costs as percent of annual average outstanding loans	1995: 3.5	1994: 13.5	1995: 10.6
Return on assets	1995: 0.55	1994: 4.8	1995: 0.14
Percentage of outstanding loans in arrears	8.3	6.5	3.6
Subsidy dependence index	1995: 35.4 <sup>b</sup>	1995: negative <sup>d</sup>	1996: positive <sup>e</sup>

Source: Adapted from Yaron, Benjamin, and Piprek (1997) except where noted.

a: BAAC reported total loans outstanding in 1996 of B177 billion (about \$6.9 billion).

b: Reported by Muraki, Webster, and Yaron (1998). According to their estimates, in 1995 BAAC would have had to increase its average yield on loan portfolio from 11.0 to 14.89 percent (i.e., 35.4 percent) to be free of subsidies.

c: Reported by Fitchett (1997).

d: Charitoneko, Patten, and Yaron (1998) reported that the BRI unit desas were so profitable in 1996 that they could have reduced their yield on loan portfolio from 31.6 to 16.3 percent and still have remained subsidy independent.

e: Reported by Morduch (1999). According to his calculations, the GB would have to increase its nominal interest rate on general loans from 20 to 33 percent to become free of subsidies.

## References

- Adams, Dale W, 1998. "The Decline in Debt Directing: An Unfinished Agenda." Paper presented at the Second Annual Seminar on New Development Finance, Goethe University of Frankfurt, 21-25 September.
- Araujo, Paulo F.C., Ricardo Shirota, and Richard L. Meyer. 1990. "Brazilian Agricultural Credit Policy Revisited in the 1980s," Savings and Development, Vol. 14, No. 1, 1990, pp. 101-116.
- Charitonenko, Stephanie, Richard H. Patten, and Jacob Yaron. 1998. "Indonesia, Bank Rakyat Indonesia – Unit Desa 1970-1996." Case Studies in Microfinance. Sustainable Banking with the Poor. Washington DC: World Bank. June.
- Chaves, Rodrigo A., and Claudio Gonzalez-Vega. 1996. "The Design of Successful Rural Financial Intermediaries: Evidence from Indonesia." World Development 24(1): 65-78.
- Christen, Robert P., Elisabeth Rhyne, Robert C. Vogel, and Cressida McKean. 1995. "Maximizing the Outreach of Microenterprise Finance: An Analysis of Successful Microfinance Programs." Program and Operations Assessment Report No. 10. Washington DC: United States Agency for International Development.
- Fitchett, Delbert. 1997. "Comparative Analysis of Savings Mobilization Strategies – Case Study of Bank for Agriculture and Agricultural Cooperatives (BAAC), Thailand." Eschborn: Deutsche Gesellschaft für Technische Zusammenarbeit.
- Hulme, David, and Paul Mosley. 1996. Finance Against Poverty. Vol. 1. London: Routledge.
- Kochkar, Kalpana, Prakash Loungani, and Mark R. Stone. 1998. "The East Asian Crisis: Macroeconomic Developments and Policy Lessons." Working Paper No. 128. Washington DC: International Monetary Fund.
- Meyer, Richard L., and Geetha Nagarajan. 2000. Rural Financial Markets in Asia: Paradigms, Policies, and Performance. In press. Oxford University Press and the Asian Development Bank.
- Morduch, Jonathan. 1999. "The Role of Subsidies in Microfinance: Evidence from the Grameen Bank." Journal of Development Economics, Vol. 60, pp. 229-248.
- Muraki, Tetsutaro, Leila Webster, and Jacob Yaron. 1998. "Thailand, BAAC – The Thai Bank for Agriculture and Agricultural Cooperatives, Case Studies in Microfinance. Sustainable Banking with the Poor. Washington DC: World Bank. April.
- Von Pischke, J.D. 1991. Finance at the Frontier. Economic Development Institute. Washington DC: World Bank.
- Wright, Graham A.N. 1999. "Microfinance Systems: Straight-Jackets or Tailored Suits, Designing Quality Financial Services for the Poor." Dhaka: University Press Limited and London: Zed Books.



Yaron, Jacob. 1992. "Successful Rural Finance Institutions." Discussion Paper No. 150. Washington DC: World Bank.

———, McDonald P. Benjamin, Jr., and Gerda L. Piprek. 1997. "Rural Finance: Issues, Design, and Best Practices." Environmentally and Socially Sustainable Development Studies and Monographs Series 14. Washington DC: World Bank.